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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,269	10/02/2003	Jari Mäkinen	059864.01114	3464
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EXAMINER				
HAN, QI				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/676,269

Applicant(s)

MAKINEN, JARI

Examiner

Qi Han

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17, 19-21 and 39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17, 19-21 and 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Amendment

2. This communication is responsive to the applicant's amendment dated 12/28/2007. The applicant(s) amended claims 1-3, 7, 17, 19 and 39, and cancelled claim 18 (see the amendment: pages 4-9).

The examiner withdraws the objection regarding abstract and drawings, because the applicant made the corresponding amendments.

The examiner withdraws the previous claim rejection under 35 USC 112 2nd, because the applicant amended the related claim(s).

Response to Arguments

3. Applicant's arguments filed on 12/28/2007 with respect to the claim rejection under 35 USC 102 and/or 103, have been fully considered but are moot in view of the new ground(s) of rejection (see below). It is noted that even though the amended claims introduce new issue that changes the scope of the claim(s), the previous cited references are still applicable to the amended claims for the prior art rejection with new ground(s) (that may use different teachings or interpretations). It is also noted that the response to the applicant's arguments based on the amended claim(s) is directed to the corresponding claim rejection (see detail below).

4. In response to applicant's arguments with respect to claim 1 (also related to claims 17 and 39) that "SU does not disclose the feature of selecting a group of codec modes in dependence of parameters determined from the encoding of the frame" and "Su does not disclose using characteristics of the encoded frames to select a codec to encode the frame" (see Remark: page 13, p(paragraph)3 to page 14, p4), "the examiner respectfully disagrees with applicant's arguments and has a different view of prior art teachings and the claim interpretations.

Firstly, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "selecting a group of codec modes in dependence of parameters determined from the encoding of the frame", "using characteristics of the encoded frames to select a codec to encode the frame"(Remark: page 13, p3 and page 14, p4)) are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Secondly, it is noted that the claimed limitation of "common parameter characteristic" is very broad, so that any characteristic relating commonly used, shared, associated and/or known parameter(s) can read on it. Further, it should be pointed out that the applicant failed to specifically define/describe what the limitation really is, in both the specification and the arguments. Therefore, SU's teachings, as stated in the rejection, including multiple characteristics associated with speech frame parameters and/or encoding frame parameters are properly read on the claimed limitation.

5. Regarding the dependent claims, the response is based on the same reason described above, because the applicant's arguments are based on the same issue(s) as stated above.

In addition, similarly, in response to applicant's argument regarding claims 7-10 that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "a processing of the speech data to predict characteristics of the encoded frame", see Remark: page 18, p2) are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 1-17, 19-21 and 39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 1-16, the limitation of "**preprocessing** the frame to estimate value for said plurality of parameter" in the newly amended claim(s) introduces new subject matter, which is not specifically disclosed by the specification.

Regarding claims 17 and 19-21, the limitation of “a **processor** configured to **preprocess** the frame to estimate value for said plurality of parameter” in the newly amended claim(s) introduces new subject matter, which is not specifically disclosed by the specification.

Regarding claims 39, the limitation of “processing means for **preprocessing** the frame to estimate value for said plurality of parameter” in the newly amended claim(s) introduces new subject matter, which is not specifically disclosed by the specification.

Claim Rejections - 35 USC § 102

7. Claims 1-6, 12, 16-17, 19-21 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by SU et al. (US 2001/0023395 A1) hereinafter referenced as SU.

As per **claim 1**, as best understood in view of the claim rejection under 35 USC 112 1st (see above), SU discloses ‘speech encoder adaptively applying pitch preprocessing with warping of target signal’ (title), comprising:

“at least one stage to encode a frame in a communication network using at least one of a plurality of codec modes, wherein an encoded frame formed by each of said codec modes comprises a plurality of parameters” (abstract and Figs 8 and 10; and p(paragraph)75 with Table 1),

“wherein said at least one stage comprise:

“preprocessing the frame to estimate values for said plurality of parameters” (Figs. 9-10 and p43 and p111, ‘pitch preprocessing ...to match (estimate) interpolated pitch values (parameters)’; Fig. 2 and p47 and p92, wherein the processing in block 279 can also be broadly interpreted as claimed “preprocessing...”),

“electing one group from a plurality of groups of said codec modes using said estimated values, wherein each of said groups comprises at least one of said codec mode modes and comprises a common parameter characteristic”, (p75 and Figs 8 and 10, wherein conditional processes (such as blocks 1010 and 1020) are interpreted as stage(s) and branch processes are interpreted as group, ‘selected bit rate (selecting one group comprising at least one of codec modes) = 6.65 kb/sec (a common parameter characteristic); p111, ‘LTP mode=0 (common parameter, for electing one group) ...referred to as pp (using said estimated values)’ that as 4.55 and 5.8 kpbs (codec mode modes) encoding bit rates (common parameters)’, which can also be broadly read on the claim); and

“encoding the frame with one of the codec modes from the selected group in dependence on said common parameter characteristic” (Fig. 10, blocks ‘1030’ to ‘1090’ show encoding a frame; also see p(paragraph)75 and Table 1; p111, ‘decision is made every frame to either operate the LTP as the traditional CELP approach, or as a modified time warping approach’, which is interpreted as the encoding depending on the common parameter characteristic, as claimed; p561, ‘adaptively selects a particular encoding scheme (group) based upon (in dependence on) various parameters and speech signal characteristics (interpreted as including common parameter characteristic)’).

As per **claim 2** (depending on claim 1), SU further discloses “a plurality of said stages”, (Figs 8 and 10, as state above; in addition, since the claim limitation is very broad , ‘VAD 235’ for active/inactive voice classification (stage) and block 279 for voice/unvoiced classification

(stage) in Fig. 2 and p89-p99, and 'multi-stage VQ' in p204-p206, can also be broadly read on the claim).

As per **claim 3** (depending on claim 1), SU further discloses "the parameters comprise **one or** more of: a voice activity detection (VAD) flag, a long term prediction (LTP) filtering flag parameter, an imittance spectral pair (ISP) parameter, a pitch delay parameter, an algebraic coodbook (CB) parameter, a gain parameter and a high-band energy parameter" (p75 (table 1) and p88-p93).

As per **claim 4** (depending on claim 1), SU further discloses "the parameter characteristic is a bit size of the parameter" (p75 (table 1) and p205-p206).

As per **claim 5** (depending on claim 1), SU further discloses "the frame is a speech frame" (p75).

As per **claim 6** (depending on claim 1), SU further discloses "the selected group consists of (comprises) one or more of said codec modes" (Figs. 8 and 10).

As per **claim 12** (depending on claim 1), SU further discloses "each of the plurality of codec modes defines a bit rate for encoding the frame" (p75).

As per **claim 16** (depending on claim 1), SU further discloses "the plurality of codec modes are codec modes of an adaptive multi rate codec" (abstract and p14).

As per **claims 17**, it recites an apparatus. The rejection is based on the same reason described for claims 1-2, because the claim recites the same or similar limitations as claims 1-2, wherein 'a single DSP' disclosed by SU (p38) is read on the claimed 'a processor'.

As per **claims 19-21**, they recite an apparatus. The rejection is based on the same reason described for claims 3-5 respectively, because the claims recite the same or similar limitation(s) as claims 3-5 respectively.

As per **claims 29**, it recites an apparatus. The rejection is based on the same reason described for claims 1-2, because the claim recites the same or similar limitations as claims 1-2.

Claim Rejections - 35 USC § 103

8. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over SU in view of CHANG et al. (US 6226607) hereinafter referenced as CHANG.

As per **claim 7** (depending on claim 1), SU does not **expressly** disclose “the **selecting** said one codec mode group is in **dependence on determined parameters** determined from the encoding of the frame”. However, the feature is well known in the art as evidenced by CHANG who discloses ‘speech coding decision process’, and teaches that ‘energy (parameter from the encoding of the frame) is a measure of the speech activity of the frame’ and if it ‘falls below a predefined threshold level’, ‘the speech coder encodes the frame as background noise’ and selects ‘1/8 rate (one codec mode group)’, and that other parameters are used to determine voice/unvoiced speech for different encoding rates (selecting ...depending on parameters) (Fig. 4 and col. 5, lines 1-67), as claimed. In addition, CHANG teaches ‘conventional speech coder’ that ‘to encode the silence at eighth rate (selecting one codec mode group), the energy (parameter) of the current frame is measured (determined), quantized and transmitted’ (in dependence on the parameters for encoding) (col. 2, lines 12-14), which further supports the rejection. Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify SU by providing selecting an encoding process based on the frame parameter(s), such as energy, as taught by CHANG, for the purpose (motivation) of sufficiently classifying the speech frame so as to use suitable encoding rates (CHANG: col. 15, lines 19-49).

Further, in another view of SU's disclosure, SU teaches 'an encoder processing circuit adaptively selects a particular encoding scheme (interpreted as codec mode or mode group) based on (in dependence on) various parameters (interpreted as determined parameters) including bit rate and speech signal characteristics (interpreted as determined from the encoding of the frame)' (p561), which can also be properly read the claim, based on broadest reasonable interpretation in light of the specification. This means that the teachings by SU alone can be satisfied for the claim rejection.

As per **claim 8** (depending on claim 1), SU in view of CHANG further discloses "the determined parameters are compared to threshold values" (SU: p93-p99; CHANG: col. 5, lines 5-49).

As per **claim 9** (depending on claim 8), the rejection is based on the same reason described for claims 7-8, because it also reads on the claim.

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over SU in view of CHANG as applied to claim 8, and further in view of well known prior art (MPEP 2144.03).

As per **claim 10** (depending on claim 8), SU in view of CHANG does not expressly disclose "the thresholds values are dependent on a target bit rate". However, an office notice is taken that a threshold value being dependent on a target bit rate for signal encoding was well

known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify SU in view of CHANG by providing related parameter threshold value(s) depending on a target bit rate, because in the multi-rate speech coding system (such as SU's encoder), different target bit rates effect bits size/length of processed/quantized parameter(s) as well as the corresponding threshold value(s).

10. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over SU.

As per **claim 13** (depending on claim 1), SU does not **expressly** disclose "said at least one stage being arranged to have a group with a codec mode with a lowest bit rate and another group with remaining codec modes". However, it is noted that SU teaches 'the AMR codec modes with different rates and the corresponding parameter grouping/arrangement (see p74 (table 1)); 'adaptively selects a particular encoding scheme (group) based upon various parameters' (p561); and arranging stage(s) for encoding schemes/groups, including 'middle bit rate', 'high bit rate', equal, above or below certain bit rate (Figs. 8 and 10). For example, SU shows block '1020' branch 'no' (Fig 10) arranges groups with bit rates below 6.65 kb/sec, which inherently includes codec mode with a lowest bit rate of 4.55 KBPS and another bit rate of 5.8 KBPS (p75). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine different teachings of SU by providing arrangement with multiple coding schemes/groups that may include a codec mode with lowest bit rate or the other codec modes based on various parameters, such as Predictor for LSF and/or Quantization (SU p75), suggested by SU himself, for the purpose (motivation) of efficiently using encoder

processing resources and/or effectively coding a speech signal at varying bit rates (SU: p11 and p14).

As per **claim 14** (depending on claim 13), the rejection is based on the same reason described for claim 13, because it also reads on the limitation of claim 14, wherein the conditional processes (SU: Figs. 8 and 10; and CHANG: Fig.4) can be interpreted as stages.

As per **claim 15** (depending on claim 15), the rejection is based on the same reason described for claims 13 and 14, because it also reads on the limitation of claim 15, wherein the conditional process 312 (CHANG: Fig.4) can be interpreted as the third stage. In addition, in another view of SU, when the branches of conditional processes are interpreted as stages (see SU: Figs.8 and 10), SU's disclosure can also satisfy the claim for the rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2626

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qi Han whose telephone numbers is (571) 272-7604. The examiner can normally be reached on Monday through Thursday from 9:00 a.m. to 7:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richmond Dorvil, can be reached on (571) 272-7602.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: ebc@uspto.gov. For general information about the PAIR system, see <http://pair-direct.uspto.gov>.

QH/qh
March 20 2008

/Richmond Dorvil/
Supervisory Patent Examiner, Art Unit 2626